WHAT IS CLAIMED IS:

1. A method of producing a magnetic disk, comprising:

forming at least a magnetic layer on a disk substrate, and

thereafter forming a carbon-based protection layer by plasma CVD using a mixed gas of a hydrocarbon-based gas and a nitrogen gas without containing an inactive gas under the condition that the disk substrate with the magnetic layer formed thereon is kept at a temperature higher than 200°C.

2. A method according to claim 1, wherein:

the mixed gas is a mixture of a low-molecular-weight straight-chain hydrocarbon-based gas and a nitrogen gas.

3. A method according to claim 1, further comprising:

exposing the carbon-based protection layer to nitrogen plasma after forming the carbon-based protection layer.

4. A method according to claim 3, further comprising:

forming a lubrication layer after exposing the carbon-based protection layer to nitrogen plasma.

5. A method according to claim 1, wherein

the magnetic disk is for use in a magnetic disk apparatus of a load/unload system.